Contents of Volume 82

No. 1. JANUARY 1997

THIS MONTH IN THE JOURNAL 1

INVITED REVIEW

Airway and alveolar permeability and surface liquid thickness: theory
J. Widdicombe 3

INVITED EDITORIAL

Invited Editorial on "Interaction of leg stiffness and surface stiffness during human hopping"
R. McN. Alexander 13

EXERCISE AND MUSCLE

Interaction of leg stiffness and surface stiffness during human hopping
D. P. Ferris and C. T. Farley 15

Alignment of microvascular units along skeletal muscle fibers of hamster retractor
G. G. Emerson and S. S. Segal 42

Testosterone and cortisol in relationship to dietary nutrients and resistance exercise
J. S. Volek, W. J. Kraemer, J. A. Bush, T. Incledon, and M. Boetes 49

Muscle capillarization, O_2 diffusion distance, and $\dot{V}O_2$ kinetics in old and young individuals
P. D. Chilibeck, D. H. Paterson, D. A. Cunningham, A. W. Taylor, and E. G. Noble 63

Age-related changes in the twitch contractile properties of human thenar motor units
T. J. Doherty and W. F. Brown 93

Gender-specific effects of dexamethasone treatment on rat diaphragm structure and function
D. J. Prezant, M. L. Karwa, B. Richner, D. Maggiore, E. I. Gentry, and J. Cahill 125

Short- and long-term effects of testosterone on diaphragm in castrated and normal male rats
D. J. Prezant, M. L. Karwa, H. H. Kim, D. Maggiore, V. Chung, and D. E. Valentine 134

Effects of muscle kinematics on surface EMG amplitude and frequency during fatiguing dynamic contractions
J. R. Potvin 144

Diaphragm disuse reduces Ca^{2+} uptake capacity of sarcoplasmic reticulum
S. Howell, W.-Z. Zhan, and G. C. Sieck 164

Lower limb skeletal muscle function after 6 wk of bed rest
H. E. Berg, L. Larsson, and P. A. Tesch 182

Peak force and maximal shortening velocity of soleus fibers after non-weight-bearing and resistance exercise
J. J. Widrick and R. H. Fitts 189

Modulation of myosin isoform expression by mechanical loading: role of stimulation frequency
V. J. Caiozzo, M. J. Baker, and K. M. Baldwin 211

Phosphorylation of rat muscle acetyl-CoA carboxylase by AMP-activated protein kinase and protein kinase A
W. W. Winder, H. A. Wilson, D. G. Hardie, B. B. Rasmussen, C. A. Hutber, G. B. Call, R. D. Clayton, L. M. Conley, S. Yoon, and B. Zhou 219

Skeletal muscle mass and exercise performance in stable ambulatory patients with heart failure
C. C. Lang, D. B. Chomsky, G. Rayos, T. K. Yeoh, and J. R. Wilson 257

Altered fractal dynamics of gait: reduced stride-interval correlations with aging and Huntington's disease
J. M. Hausdorff, S. L. Mitchell, R. Firtion, C. K. Peng, M. E. Cudkowicz, J. Y. Wei, and A. L. Goldberger 262

Pliometric contraction-induced injury of mouse skeletal muscle: effect of initial length
K. D. Hunter and J. A. Faulkner 278

A model for phosphocreatine resynthesis (MODELING IN PHYSIOLOGY)
A. M. Nevill, D. A. Jones, D. McIntyre, G. C. Bogdanis, and M. E. Nevill 329

Persistence of supercompensated muscle glycogen in trained subjects after carbohydrate loading (SPECIAL COMMUNICATION)
H. W. Goforth, Jr., D. A. Arnall, B. L. Bennett, and P. G. Law 342

Determination of fascicle length and pennation in a contracting human muscle in vivo (RAPID COMMUNICATION)
T. Fukunaga, Y. Ichinose, M. Ito, Y. Kawakami, and S. Fukashiro 354

METABOLISM

Relationship between maximum aerobic power and resting metabolic rate in young adult women
D. A. Smith, J. Dollman, R. T. Withers, M. Brinkman, J. P. Keeves, and D. G. Clark 156

Glucose administration before exercise modulates catecholaminergic responses in glycogen-depleted subjects
D. Gozal, P. Thiriet, J. M. Cottet-Emard, D. Wouassi, E. Bitanga, A. Geyssant, J. M. Pequignot, and M. Sagnol 248

Training intensity, blood lipids, and apolipoproteins in men with high cholesterol
S. F. Crouse, B. C. O'Brien, P. W. Grandjean, R. C. Lowe, J. J. Rohack, J. S. Green, and H. Tolson 270

Effect of an 18-wk weight-training program on energy expenditure and physical activity
L. M. L. A. Van Etten, K. R. Westerterp, F. T. J. Verstappen, B. J. B. Boon, and W. H. M. Saris 298

Evidence that nitric oxide increases glucose transport in skeletal muscle (RAPID COMMUNICATION)
T. W. Balon and J. L. Nadler 359

Plasma 2-hydroxycatecholestrogen responses to acute submaximal and maximal exercise in untrained women (RAPID COMMUNICATION)
C. De Crée, P. Ball, B. Seidlitz, G. Van Kranenburg, P. Geurten, and H. A. Keizer 364

CONTROL OF BREATHING, CIRCULATION, AND TEMPERATURE

Effects of carotid body hypocapnia during ventilatory acclimatization to hypoxia
M. R. Dwinell, P. L. Janssen, J. Pizarro, and G. E. Bisgard 118

Effect of N^{ω}-nitro-L-arginine on ventilatory response to hypercapnia in anesthetized cats
L. Teppema, A. Berkenbosch, and C. Olievier 292

Ventilation and metabolism among rat strains
K. P. Strohl, A. J. Thomas, P. St. Jean, E. H. Schlenker, R. J. Koletsky, and N. J. Schork 317

Role of carotid body activity responsible for hypoxic ventilatory decline in awake humans (LETTERS TO THE EDITOR)
Y. Honda, H. Kimura, and M. Tanaka 371

CELLULAR ASPECTS OF LUNG FUNCTION

Lisofylline prevents leak, but not neutrophil accumulation, in lungs of rats given IL-1 intratracheally
B. M. Hybertson, S. L. Bursten, J. A. Leff, Y. M. Lee, E. K. Jepson, C. R. Dewitt, J. Zagorski, H. G. Cho, and J. E. Repine 226

Effects of acute hyperoxic exposure on solute fluxes across the blood-gas barrier in rat lungs
L. P. Zheng, R. S. Du, and B. E. Goodman 240

SYSTEMIC CIRCULATION AND FLUID BALANCE

Atrial natriuretic peptide levels and plasma volume contraction in acute alveolar hypoxia
T. S. E. Albert, V. L. Tucker, and E. M. Renkin 102

Acute alveolar hypoxia increases blood-to-tissue albumin transport: role of atrial natriuretic peptide
T. S. E. Albert, V. L. Tucker, and E. M. Renkin 111

Comparison of techniques for measuring pulse-wave velocity in the rat
G. F. Mitchell, M. A. Pfeffer, P. V. Finn, and J. M. Pfeffer 203

Whole body sweat collection in humans: an improved method with preliminary data on electrolyte content (SPECIAL COMMUNICATION)
S. M. Shirreffs and R. J. Maughan 336

GAS EXCHANGE, MECHANICS, AND AIRWAYS

A distributed nonlinear model of lung tissue elasticity
G. N. Maksym and J. H. T. Bates 32

Temporal dynamics of acute isovolume bronchoconstriction in the rat
J. H. T. Bates, T. F. Schuessler, C. Dolman, and D. H. Eidelman 55

Airway smooth muscle orientation in intraparenchymal airways
M. Lei, H. Ghezzo, M. F. Chen, and D. H. Eidelman 70

Effects of a synthetic lung surfactant on pharyngeal patency in awake human subjects
T. Van der Touw, A. B. H. Crawford, and J. R. Wheatley 78

Myoglobin oxygen dissociation by multiwavelength spectroscopy
K. A. Schenkman, D. R. Marble, D. H. Burns, and E. O. Feigl 86

Air entry in infant resuscitation: oral or nasal routes?
S. L. Wilson-Davis, S. L. Tonkin, and T. R. Gunn 152

Respiratory transfer impedance between 8 and 384 Hz in guinea pigs before and after bronchial challenge
J. F. Sobh, C. M. Lilly, J. M. Drazen, and A. C. Jackson 172

Sources of error in A-aD_{O_2} calculated from blood stored in plastic and glass syringes
E. Y. Wu, K. W. Barazanji, and R. L. Johnson, Jr. 196

Effects of surface tension and intraluminal fluid on mechanics of small airways
M. J. Hill, T. A. Wilson, and R. K. Lambert 233

Eglin-c prevents monocrotaline-induced ventilatory dysfunction
Y. L. Lai and K.-R. Zhou 324

PULMONARY CIRCULATION AND LUNG FLUID BALANCE

Nature and site of action of endogenous nitric oxide in vasculature of isolated pig lungs
G. Cremona, T. Higenbottam, M. Takao, E. A. Bower, and L. W. Hall 23

Angiogenesis in bronchial circulatory system after unilateral pulmonary artery obstruction
N. B. Charan and P. Carvalho 284

Exhalation of gaseous nitric oxide by rats in response to endotoxin and its absorption by the lungs
J. T. Stitt, A. B. Dubois, J. S. Douglas, and S. G. Shimada 305

Alveolar liquid clearance in multiple nonperfused canine lung lobes (SPECIAL COMMUNICATION)
J. D. Grimme, S. M. Lane, and M. B. Maron 348

No. 2. FEBRUARY 1997

THIS MONTH IN THE JOURNAL 373

INVITED EDITORIAL

Invited Editorial on "Prolongation in expiration evoked from ventrolateral pons of adult rats"
W. M. St. John 375

ENVIRONMENT

Effect of endurance training and seasonal fluctuation on coagulation and fibrinolysis in young sedentary men
P. J. M. Van den Burg, J. E. H. Hospers, M. Van Vliet, W. L. Mosterd, B. N. Bouma, and I. A. Huisveld 613

EXERCISE AND MUSCLE

Mortality rate and longevity of food-restricted exercising male rats: a reevaluation
J. O. Holloszy 399

Instantaneous force-velocity-length relationship in diaphragmatic sarcomere
C. Coirault, D. Chemla, J.-C. Pourny, F. Lambert, and Y. Lecarpentier 404

Contractile properties of clenbuterol-treated *mdx* muscle are enhanced by low-intensity swimming
A. Hayes and D. A. Williams 435

Respective oxidation of ^{13}C-labeled lactate and glucose ingested simultaneously during exercise
F. Péronnet, Y. Burelle, D. Massicotte, C. Lavoie, and C. Hillaire-Marcel 440

Lactate inhibits Ca^{2+}-activated Ca^{2+}-channel activity from skeletal muscle sarcoplasmic reticulum
T. G. Favero, A. C. Zable, D. Colter, and J. J. Abramson 447

Time- and order-dependent changes in functional and NO-mediated dilation during exercise training
J. M. Lash and H. G. Bohlen 460

Voluntary exercise training enhances glucose transport in muscle stimulated by insulin-like growth factor I
J. Y. Hokama, R. S. Streeper, and E. J. Henriksen 508

Diaphragm interference pattern EMG and compound muscle action potentials: effects of chest wall configuration
J. Beck, C. Sinderby, L. Lindström, and A. Grassino 520

Left ventricular mass, geometry, and filling in endurance athletes: association with exercise blood pressure
J. Karjalainen, M. Mäntysaari, M. Viitasalo, and U. Kujala 531

Nociceptive atrophy of the rat soleus muscle induced by bone fracture: a morphometric study
G. Zachařová, H. Knotková-Urbancová, P. Hník, and T. Soukup 552

Effect of pulmonary emphysema on diaphragm capillary geometry
D. C. Poole and O. Mathieu-Costello 599

Blood pressure risk factors in healthy postmenopausal women: physical activity and hormone replacement
E. T. Stevenson, K. P. Davy, P. P. Jones, C. A. Desouza, and D. R. Seals 652

Effect of endurance exercise training on muscle glycogen supercompensation in rats **(RAPID COMMUNICATION)**
A. Nakatani, D.-H. Han, P. A. Hansen, L. A. Nolte, H. H. Host, R. C. Hickner, and J. O. Holloszy 711

METABOLISM

Comparison of energy expenditure elevations after submaximal and supramaximal running
J. Laforgia, R. T. Withers, N. J. Shipp, and C. J. Gore 661

Nevill's explanation of Kleiber's 0.75 mass exponent: an artifact of collinearity problems in least squares models? **(MODELING IN PHYSIOLOGY)**
A. M. Batterham, K. Tolfrey, and K. P. George 693

CONTROL OF BREATHING, CIRCULATION, AND TEMPERATURE

Prolongation in expiration evoked from ventrolateral pons of adult rats
J. S. Jodkowski, S. K. Coles, and T. E. Dick 377

Effects of caffeine on carotid sinus nerve chemosensory discharge in kittens and cats
A. Bairam, P. De Grandpré, C. Dauphin, and F. Marchal 413

Long-term facilitation of upper airway muscle activities in vagotomized and vagally intact cats
J. H. Mateika and R. F. Fregosi 419

Effects of unilateral lesions of retrotrapezoid nucleus on breathing in awake rats
M. R. Akilesh, M. Kamper, A. Li, and E. E. Nattie 469

Putative projection of phrenic afferents to the limbic cortex in humans studied with cerebral-evoked potentials
C. Straus, M. Zelter, J.-P. Derenne, B. Pidoux, J.-C. Willer, and T. Similowski 480

Effect of chronic resistive loading on hypoxic ventilatory responsiveness
H. E. Greenberg, R. S. Rao, A. L. Sica, and S. M. Scharf 500

Human ventilatory response to acute hyperoxia during and after 8 h of both isocapnic and poikilocapnic hypoxia
J. G. Tansley, C. Clar, M. E. F. Pedersen, and P. A. Robbins 513

Effect of running intensity on intestinal permeability
K. L. Pals, R.-T. Chang, A. J. Ryan, and C. V. Gisolfi 571

Muscle chemoreflex alters carotid sinus baroreflex response in humans
Y. Papelier, P. Escourrou, F. Helloco, and L. B. Rowell 577

Respiratory function of velopharyngeal constrictor muscles during wakefulness in normal adults
S. H. Launois, J. Tsui, and J. W. Weiss 584

Periodic breathing induced on demand in awake newborn lamb
E. Canet, J.-P. Praud, and M. A. Bureau 607

Extended models of the ventilatory response to sustained isocapnic hypoxia in humans
P.-J. Liang, D. A. Bascom, and P. A. Robbins 667

Interaction between carotid and cardiopulmonary baroreflexes (LETTERS TO THE EDITOR)
J. R. Halliwill and J. A. Taylor; X. Shi and P. B. Raven 716

CELLULAR ASPECTS OF LUNG FUNCTION

Protective role of synthetic sialylated oligosaccharide in sepsis-induced acute lung injury
P. C. Ridings, S. Holloway, G. L. Bloomfield, M. L. Phillips, B. J. Fisher, C. R. Blocher, H. J. Sugerman, and A. A. Fowler III 644

SYSTEMIC CIRCULATION AND FLUID BALANCE

Esophageal P_{CO_2} as a monitor of perfusion failure during hemorrhagic shock
Y. Sato, M. H. Weil, W. Tang, S. Sun, J. Xie, J. Bisera, and H. Hosaka 558

H_2O_2 increases sheep tracheal blood flow, permeability, and vascular response to luminal capsaicin
U. M. Wells, S. Duneclift, and J. G. Widdicombe 621

Performance of the AM-5600 blood pressure monitor: comparison with ambulatory intra-arterial pressure (SPECIAL COMMUNICATION)
S. Omboni, G. Parati, A. Groppelli, L. Ulian, and G. Mancia 698

Assessing total body and extracellular water from bioelectrical response spectroscopy (SPECIAL COMMUNICATION)
S. F. Siconolfi, R. J. Gretebeck, W. W. Wong, R. A. Pietrzyk, and S. S. Suire 704

GAS EXCHANGE, MECHANICS, AND AIRWAYS

Effects of the combination of skin cooling and hyperpnea of frigid air in asthmatic and normal subjects
J. S. McDonald, J. Nelson, K. A. Lenner, M. L. McLane, and E. R. McFadden, Jr. 453

Hyperpnea-induced bronchoconstriction is dependent on tachykinin-induced cysteinyl leukotriene synthesis
X. X. Yang, W. S. Powell, M. Hojo, and J. G. Martin 538

Quantitative analysis of transpleural flux in the isolated lung
M. H. Li, J. Hildebrandt, and M. P. Hlastala 545

Adaptation of the doubly labeled water method for subjects consuming isotopically enriched water
R. J. Gretebeck, D. A. Schoeller, R. A. Socki, J. Davis-Street, E. K. Gibson, L. O. Schulz, and H. W. Lane 563

Mechanism of lobar alveolar pressure decline during forced deflation in canine regional emphysema
S. N. Mink 632

PULMONARY CIRCULATION AND LUNG FLUID BALANCE

Ultrastructural changes of lung capillary endothelium in response to botulinum C_2 toxin
L. Ermert, H.-R. Duncker, H. Brückner, F. Grimminger, T. Hansen, R. Rössig, K. Aktories, and W. Seeger 382

Dirofilaria immitis: heartworm infection alters pulmonary artery endothelial cell behavior
M. Mupanomunda, J. F. Williams, C. D. Mackenzie, and L. Kaiser 389

Innervation pattern of guinea pig pulmonary vasculature depends on vascular diameter
R. Haberberger, M. Schemann, H. Sann, and W. Kummer 426

Effect of lung inflation in vivo on airways with smooth muscle tone or edema
R. H. Brown, W. Mitzner, Y. Bulut, and E. M. Wagner 491

Thromboxane A_2 mediates increased pulmonary microvascular permeability after intestinal reperfusion
R. H. Turnage, J. L. LaNoue, K. M. Kadesky, Y. Meng, and S. I. Myers 592

Pulmonary blood flow distribution has a hilar-to-peripheral gradient in awake, prone sheep
S. M. Walther, K. B. Domino, R. W. Glenny, N. L. Polissar, and M. P. Hlastala 678

Nitric oxide and β-adrenergic agonist-induced bronchial arterial vasodilation
N. B. Charan, S. R. Johnson, S. Lakshminarayan, W. H. Thompson, and P. Carvalho 686

No. 3. MARCH 1997

THIS MONTH IN THE JOURNAL 719

INVITED EDITORIAL

Invited Editorial on "Detection of expiratory flow limitation during exercise in COPD patients"
J. R. Rodarte 721

ENVIRONMENT

O_2 availability modulates transmembrane Ca^{2+} flux via second-messenger pathways in anoxia-tolerant hepatocytes
S. C. Land, R. H. Sanger, and P. J. S. Smith 776

Intravenous vs. oral rehydration: effects on subsequent exercise-heat stress
J. W. Castellani, C. M. Maresh, L. E. Armstrong, R. W. Kenefick, D. Riebe, M. Echegaray, D. Casa, and V. D. Castracane 799

Decompression comparison of helium and hydrogen in rats
R. S. Lillo, E. C. Parker, and W. R. Porter 892

Oxygen pulse in guinea pigs in hyperbaric helium and hydrogen
(MODELING IN PHYSIOLOGY)
S. R. Kayar and E. C. Parker 988

EXERCISE AND MUSCLE

Detection of expiratory flow limitation during exercise in COPD patients
N. G. Koulouris, I. Dimopoulou, P. Valta, R. Finkelstein, M. G. Cosio, and J. Milic-Emili 723

Time course of recovery from nerve injury in skeletal muscle: energy state and local circulation
Y. Hayashi, T. Ikata, H. Takai, S. Takata, T. Sogabe, and K. Koga 732

Both physical fitness and acute exercise regulate nitric oxide formation in healthy humans
L. Jungersten, A. Ambring, B. Wall, and Å. Wennmalm 760

Age and gender interactions in physiological functional capacity: insight from swimming performance
H. Tanaka and D. R. Seals 846

Cardiac output estimated noninvasively from oxygen uptake during exercise
W. W. Stringer, J. E. Hansen, and K. Wasserman 908

Multivariate genetic analysis of maximal isometric muscle force at different elbow angles
M. A. Thomis, M. Van Leemputte, H. H. Maes, C. J. R. Blimkie, A. L. Claessens, G. Marchal, E. Willems, R. F. Vlietinck, and G. P. Beunen 959

Myosin heavy chain mRNA transform to faster isoforms in immobilized skeletal muscle: a quantitative PCR study
H. Jänkälä, V.-P. Harjola, N. E. Petersen, and M. Härkönen 977

Mechanomyographic responses to maximal eccentric isokinetic muscle actions (SPECIAL COMMUNICATION)
D. B. Smith, T. J. Housh, J. R. Stout, G. O. Johnson, T. K. Evetovich, and K. T. Ebersole 1003

METABOLISM

Enlargement of glycogen store in rat liver and muscle by fructose-diet intake and exercise training
T. Murakami, Y. Shimomura, N. Fujitsuka, M. Sokabe, K. Okamura, and S. Sakamoto 772

Resistance exercise maintains skeletal muscle protein synthesis during bed rest
A. A. Ferrando, K. D. Tipton, M. M. Bamman, and R. R. Wolfe 807

Exercise training increases sarcolemmal GLUT-4 protein and mRNA content in diabetic heart
B. A. Osborn, J. T. Daar, R. A. Laddaga, F. D. Romano, and D. J. Paulson 828

Exogenous glucose oxidation during exercise in endurance-trained and untrained subjects
A. E. Jeukendrup, M. Mensink, W. H. M. Saris, and A. J. M. Wagenmakers 835

High-energy phosphates and tension production in rabbit tibialis anterior/extensor digitorum longus muscles (SPECIAL COMMUNICATION)
T. W. Ryschon, J. C. Jarvis, S. Salmons, and R. S. Balaban 1024

CONTROL OF BREATHING, CIRCULATION, AND TEMPERATURE

Mechanisms of stimulation of vagal pulmonary C fibers by pulmonary air embolism in dogs
H. F. Chen, B. P. Lee, and Y. R. Kou 765

Ventilatory effects of specific carotid body hypocapnia and hypoxia in awake dogs
C. A. Smith, C. A. Harms, K. S. Henderson, and J. A. Dempsey 791

Further cholinergic aspects of carotid body chemotransduction of hypoxia in cats
R. S. Fitzgerald, M. Shirahata, and T. Ide 819

Genetic control of differential baseline breathing pattern
C. G. Tankersley, R. S. Fitzgerald, R. C. Levitt, W. A. Mitzner, S. L. Ewart, and S. R. Kleeberger 874

Effects of inhaled CO_2 and added dead space on idiopathic central sleep apnea
A. Xie, F. Rankin, R. Rutherford, and T. D. Bradley 918

Dew-point hygrometry system for measurement of evaporative water loss in infants (SPECIAL COMMUNICATION)
R. L. Ariagno, S. F. Glotzbach, R. B. Baldwin, D. M. Rector, S. M. Bowley, and R. J. Moffat 1008

CELLULAR ASPECTS OF LUNG FUNCTION

XO increases neutrophil adherence to endothelial cells by a dual ICAM-1 and P-selectin-mediated mechanism
L. S. Terada, B. M. Hybertson, K. G. Connelly, D. Weill, D. Piermattei, and J. E. Repine 866

Endogenous nitric oxide decreases xanthine oxidase-mediated neutrophil adherence: role of P-selectin
L. S. Terada, J. E. Repine, D. Piermattei, and B. M. Hybertson 913

SYSTEMIC CIRCULATION AND FLUID BALANCE

Effects of adenosine on pressure-flow relationships in an in vitro model of compartment syndrome
I. Shrier, A. Baratz, and S. Magder 755

Bronchial vasodilatory response to ionic and nonionic contrast media
E. M. Baile, L. Wang, L. Verburgt, and P. D. Paré 841

GAS EXCHANGE, MECHANICS, AND AIRWAYS

Esophageal stimulation by hydrochloric acid causes neurogenic inflammation in the airways in guinea pigs
J. Hamamoto, H. Kohrogi, O. Kawano, H. Iwagoe, K. Fujii, N. Hirata, and M. Ando 738

Ventilatory response to exercise in subjects breathing CO_2 or HeO_2
T. G. Babb 746

Influence of age and breed on the binding of oxygen to red blood cells of bovine calves
P. Gustin, B. Detry, A. Robert, M. L. Cao, F. Lessire, C. Cambier, V. Katz, M. Ansay, A. Frans, and T. Clerbaux 784

Respiratory system mechanics in sedated, paralyzed, morbidly obese patients
P. Pelosi, M. Croci, I. Ravagnan, M. Cerisara, P. Vicardi, A. Lissoni, and L. Gattinoni 811

Paradoxical helium and sulfur hexafluoride single-breath washouts in short-term vs. sustained microgravity
A.-M. Lauzon, G. K. Prisk, A. R. Elliott, S. Verbanck, M. Paiva, and J. B. West 859

Changes in regional lung mechanics and ventilation distribution after unilateral pulmonary artery occlusion
B. A. Simon, K. Tsuzaki, and J. G. Venegas 882

Shunt and ventilation-perfusion distribution during partial liquid ventilation in healthy piglets
E. A. Mates, J. Hildebrandt, J. C. Jackson, P. Tarczy-Hornoch, and M. P. Hlastala 933

High-resolution maps of regional ventilation utilizing inhaled fluorescent microspheres
H. T. Robertson, R. W. Glenny, D. Stanford, L. M. McInnes, D. L. Luchtel, and D. Covert 943

Conservation of bronchiolar wall area during constriction and dilation of human airways
R. W. Mitchell, E. Rühlmann, H. Magnussen, N. M. Muñoz, A. R. Leff, and K. F. Rabe 954

Branching design of the bronchial tree based on a diameter-flow relationship
H. Kitaoka and B. Suki 968

Frequency dependence of forced oscillatory respiratory mechanics in horses with heaves
S. S. Young, D. Tesarowski, and L. Viel 983

Three-dimensional reconstruction of human diaphragm with the use of spiral computed tomography (SPECIAL COMMUNICATION)
N. Pettiaux, M. Cassart, M. Paiva, and M. Estenne 998

Human respiratory input impedance between 32 and 800 Hz, measured by interrupter technique and forced oscillations (SPECIAL COMMUNICATION)
U. Frey, B. Suki, R. Kraemer, and A. C. Jackson 1018

PULMONARY CIRCULATION AND LUNG FLUID BALANCE

Segmental pulmonary vascular responses to ATP in rat lungs: role of nitric oxide
T. S. Hakim, L. Ferrario, J. C. Freedman, R. E. Carlin, and E. M. Camporesi 852

Spatial pattern of pulmonary blood flow distribution is stable over days
R. W. Glenny, S. McKinney, and H. T. Robertson 902

Lung liquid production rates and volumes do not decrease before labor in healthy fetal sheep
A. Lines, S. B. Hooper, and R. Harding 927

No. 4. APRIL 1997

THIS MONTH IN THE JOURNAL 1031

INVITED EDITORIAL

Invited Editorial on "Nitric oxide and thermoregulation during exercise in the horse"
M. J. Joyner 1033

ENVIRONMENT

Pulmonary diffusing capacity and pulmonary capillary blood volume during parabolic flights
P. Vaïda, C. Kays, D. Rivière, P. Téchoueyres, and J.-L. Lachaud 1091

EXERCISE AND MUSCLE

Effect of insulin-like growth factor I and/or growth hormone on diaphragm of malnourished adolescent rats
M. I. Lewis, T. J. LoRusso, and M. Fournier 1064

Effects of nandrolone decanoate on respiratory and peripheral muscles in male and female rats
A. Bisschop, G. Gayan-Ramirez, H. Rollier, P. N. R. Dekhuijzen, R. Dom, V. de Bock, and M. Decramer 1112

N-acetylcysteine administration alters the response to inspiratory loading in oxygen-supplemented rats
G. S. Supinski, D. Stofan, R. Ciufo, and A. DiMarco 1119

K^+ supplementation increases muscle [Na^+-K^+-ATPase] and improves extrarenal K^+ homeostasis in rats
H. Bundgaard, T. A. Schmidt, J. S. Larsen, and K. Kjeldsen 1136

Metabolic and phenotypic adaptations of diaphragm muscle fibers with inactivation
W.-Z. Zhan, H. Miyata, Y. S. Prakash, and G. C. Sieck 1145

Comparison of magnetic and electrical phrenic nerve stimulation in assessment of phrenic nerve conduction time
T. Similowski, S. Mehiri, A. Duguet, V. Attali, C. Straus, and J.-P. Derenne 1190

Doublet potentiation during eccentric and concentric contractions of cat soleus muscle
T. G. Sandercock and C. J. Heckman 1219

Induction of neuronal type nitric oxide synthase in skeletal muscle by chronic electrical stimulation in vivo
P. J. Reiser, W. O. Kline, and P. L. Vaghy 1250

Response of compressed skinned skeletal muscle fibers to conditions that simulate fatigue
K. H. Myburgh and R. Cooke 1297

Resistance and aerobic training in older men: effects on $\dot{V}O_{2peak}$ and the capillary supply to skeletal muscle
R. T. Hepple, S. L. M. Mackinnon, J. M. Goodman, S. G. Thomas, and M. J. Plyley 1305

Prior eccentric contractions impair maximal insulin action on muscle glucose uptake in the conscious rat
S. Asp, A. Watkinson, N. D. Oakes, and E. W. Kraegen 1327

Na^+ channel and acetylcholine receptor changes in muscle at sites distant from burns do not simulate denervation
M. T. Nosek and J. A. J. Martyn 1333

Enhancement of signal quality in esophageal recordings of diaphragm EMG (SPECIAL COMMUNICATION)
C. A. Sinderby, J. C. Beck, L. H. Lindström, and A. E. Grassino 1370

METABOLISM

Effects of diet on muscle triglyceride and endurance performance
R. D. Starling, T. A. Trappe, A. C. Parcell, C. G. Kerr, W. J. Fink, and D. L. Costill 1185

Body composition analysis by DEXA by using dynamically changing samarium filtration
A. Gotfredsen, L. Bæksgaard, and J. Hilsted 1200

Effects of hypothermia on energy metabolism in rat and Richardson's ground squirrel hearts
D. D. Belke, L. C. H. Wang, and G. D. Lopaschuk 1210

Sympathetic drive to liver and nonhepatic splanchnic tissue during heavy exercise
R. H. Coker, M. G. Krishna, D. B. Lacy, E. J. Allen, and D. H. Wasserman 1244

Training-induced alterations of glucose flux in men
A. L. Friedlander, G. A. Casazza, M. A. Horning, M. J. Huie, and G. A. Brooks 1360

CONTROL OF BREATHING, CIRCULATION, AND TEMPERATURE

Nitric oxide and thermoregulation during exercise in the horse
P. C. Mills, D. J. Marlin, C. M. Scott, and N. C. Smith 1035

Interactive effects of K^+, acid, norepinephrine, and ischemia on the heart: implications for exercise
M. O'Neill, C. E. Sears, and D. J. Paterson 1046

Spirometry with a Fleisch pneumotachograph: upstream heat exchanger replaces heating requirement
M. R. Miller, O. F. Pedersen, and T. Sigsgaard 1053

Acute blood pressure elevation during repetitive hypocapnic and eucapnic hypoxia in rats
G. Bao, P. M. Randhawa, and E. C. Fletcher 1071

Effect of luteal phase elevation in core temperature on forearm blood flow during exercise
M. A. Kolka and L. A. Stephenson 1079

Age, fitness, and regional blood flow during exercise in the heat
C. W. Ho, J. L. Beard, P. A. Farrell, C. T. Minson, and W. L. Kenney 1126

Respiratory-related neurons of the fastigial nucleus in response to chemical and mechanical challenges
F. Xu and D. T. Frazier 1177

Dehydration markedly impairs cardiovascular function in hyperthermic endurance athletes during exercise
J. González-Alonso, R. Mora-Rodríguez, P. R. Below, and E. F. Coyle 1229

Sympathetic outflow to the skeletal muscle in humans increases during prolonged light exercise
M. Saito, R. Sone, M. Ikeda, and T. Mano 1237

Anatomy of pharynx in patients with obstructive sleep apnea and in normal subjects
S. Isono, J. E. Remmers, A. Tanaka, Y. Sho, J. Sato, and T. Nishino 1319

SYSTEMIC CIRCULATION AND FLUID BALANCE

Does endothelin-1 participate in the exercise-induced changes of blood flow distribution of muscles in humans?
S. Maeda, T. Miyauchi, M. Sakane, M. Saito, S. Maki, K. Goto, and M. Matsuda 1107

A simple mathematical model of the interaction between intracranial pressure and cerebral hemodynamics
M. Ursino and C. A. Lodi 1256

Intracranial pressure dynamics in patients with acute brain damage
M. Ursino, C. A. Lodi, S. Rossi, and N. Stocchetti 1270

GAS EXCHANGE, MECHANICS, AND AIRWAYS

Ventilation inhomogeneity in oleic acid-induced pulmonary edema
J. Y. C. Tsang, M. J. Emery, and M. P. Hlastala 1040

Respiratory tissue properties derived from flow transfer function in healthy humans
W. Tomalak, R. Peslin, and C. Duvivier 1098

Effects of lung motion and tracer kinetics corrections on PET imaging of pulmonary function
S. M. Mijailovich, S. Treppo, and J. G. Venegas 1154

Contributions of pulmonary perfusion and ventilation to heterogeneity in $\dot{V}_A/\dot{Q}$ measured by PET
S. Treppo, S. M. Mijailovich, and J. G. Venegas 1163

Determination of production of nitric oxide by lower airways of humans—theory
R. W. Hyde, E. J. Geigel, A. J. Olszowka, J. A. Krasney, R. E. Forster II, M. J. Utell, and M. W. Frampton 1290

Nitric oxide response in exhaled air during an incremental exhaustive exercise
M. F. Chirpaz-Oddou, A. Favre-Juvin, P. Flore, J. Eterradossi, M. Delaire, F. Grimbert, and A. Therminarias 1311

In vivo assessment of changes in air and tissue volumes after pneumonectomy
S. Takeda, E. Y. Wu, R. H. Epstein, A. S. Estrera, and C. C. W. Hsia 1340

Partitioning of lung tissue response and inhomogeneous airway constriction at the airway opening
B. Suki, H. Yuan, Q. Zhang, and K. R. Lutchen 1349

PULMONARY CIRCULATION AND LUNG FLUID BALANCE

Prevention of ischemia-reperfusion lung injury by sulfated Lewis^a pentasaccharide
J. Reignier, H. Sellak, R. Lemoine, A. Lubineau, G. M. Mazmanian, H. Detruit, A. Chapelier, P. Hervé, and The Paris-Sud University Lung Transplantation Group 1058

Hypoxic vasoconstriction in pulmonary arterioles and venules
S. C. Hillier, J. A. Graham, C. C. Hanger, P. S. Godbey, R. W. Glenny, and W. W. Wagner, Jr. 1084

Computer determination of perfusion patterns in pulmonary capillary networks
C. C. Hanger, R. G. Presson, Jr., O. Okada, S. J. Janke, J. J. Watkins, W. W. Wagner, Jr., and R. L. Capen 1283

Retention of soluble ^{99m}Tc-DTPA in the human lung: 24-h postdeposition (SPECIAL COMMUNICATION)
W. M. Foster, P. T. Stetkiewicz, and A. N. Freed 1378

No. 5. MAY 1997

THIS MONTH IN THE JOURNAL 1383

INVITED REVIEW

Immune response to heavy exertion
D. C. Nieman 1385

INVITED EDITORIAL

Invited Editorial on "Effect of mechanical deformation on structure and function of polymorphonuclear leukocytes"
G. P. Downey 1395

ENVIRONMENT

Release of glutathione from erythrocytes and other markers of oxidative stress in carbon monoxide poisoning
S. R. Thom, M. Kang, D. Fisher, and H. Ischiropoulos 1424

Thermal and metabolic responses to cold-water immersion at knee, hip, and shoulder levels
D. T. Lee, M. M. Toner, W. D. McArdle, I. S. Vrabas, and K. B. Pandolf 1523

EXERCISE AND MUSCLE

Skeletal muscle mass and the reduction of $\dot{V}O_{2max}$ in trained older subjects
D. N. Proctor and M. J. Joyner 1411

Combined myofibrillar and mitochondrial creatine kinase deficiency impairs mouse diaphragm isotonic function
J. F. Watchko, M. J. Daood, G. C. Sieck, J. J. LaBella, B. T. Ameredes, A. P. Koretsky, and B. Wieringa 1416

Effects of hypoxia on diaphragm relaxation rate during fatigue
E. Van Lunteren, A. Torres, and M. Moyer 1472

Training improves endothelium-dependent vasodilation in resistance vessels of patients with heart failure
S. D. Katz, J. Yuen, R. Bijou, and T. H. LeJemtel 1488

Effects of electrically induced fatigue on the twitch and tetanus of paralyzed soleus muscle in humans
R. K. Shields, L. F. Law, B. Reiling, K. Sass, and J. Wilwert 1499

Twenty-year follow-up of aerobic power and body composition of older track athletes
M. L. Pollock, L. J. Mengelkoch, J. E. Graves, D. T. Lowenthal, M. C. Limacher, C. Foster, and J. H. Wilmore 1508

Dynamic resistance exercise and resting blood pressure in adults: a meta-analysis
G. Kelley 1559

Dobutamine as a countermeasure for reduced exercise performance of rats exposed to simulated microgravity
C. M. Tipton and L. A. Sebastian 1607

Effects of fatigue duration and muscle type on voluntary and evoked contractile properties
D. G. Behm and D. M. M. St-Pierre 1654

Carbohydrate and the cytokine response to 2.5 h of running
S. L. Nehlsen-Cannarella, O. R. Fagoaga, D. C. Nieman, D. A. Henson, D. E. Butterworth, R. L. Schmitt, E. M. Bailey, B. J. Warren, A. Utter, and J. M. Davis 1662

Modeling of adaptations to physical training by using a recursive least squares algorithm (MODELING IN PHYSIOLOGY)
T. Busso, C. Denis, R. Bonnefoy, A. Geyssant, and J.-R. Lacour 1685

A permanent prosthesis for converting in situ muscle contractions into hydraulic power for cardiac assist (SPECIAL COMMUNICATION)
D. R. Trumble and J. A. Magovern 1704

Optimum sarcomere length in mammalian diaphragm (LETTERS TO THE EDITOR)
D. C. Poole; C. Coirault, D. Chemla, and Y. Lecarpentier 1712

METABOLISM

Predicting body cell mass with bioimpedance by using theoretical methods: a technological review
A. De Lorenzo, A. Andreoli, J. Matthie, and P. Withers 1542

CONTROL OF BREATHING, CIRCULATION, AND TEMPERATURE

Pregnancy alters body-core temperature response to a simulated open field in rats
J. E. Fewell and P. A. Tang 1406

Short-term exercise training alters responses of porcine femoral and brachial arteries
R. M. McAllister and M. H. Laughlin 1438

Influence of pregnancy on the febrile response to ICV administration of PGE_1 in rats studied in a thermocline
H. L. Eliason and J. E. Fewell 1453

Respiratory muscle work compromises leg blood flow during maximal exercise
C. A. Harms, M. A. Babcock, S. R. McClaran, D. F. Pegelow, G. A. Nickele, W. B. Nelson, and J. A. Dempsey 1573

Effects of supplemental oxygen on forearm vasodilation in humans
P. Crawford, P. A. Good, E. Gutierrez, J. H. Feinberg, J. P. Boehmer, D. H. Silber, and L. I. Sinoway 1601

Intracerebroventricular propranolol prevented vascular resistance increases on arousal from sleep apnea
S. Zinkovska and D. A. Kirby 1637

CELLULAR ASPECTS OF LUNG FUNCTION

Guinea pig pulmonary hypertension caused by cigarette smoke cannot be explained by capillary bed destruction
H. Yamato, J. P. Sun, A. Churg, and J. L. Wright 1644

SYSTEMIC CIRCULATION AND FLUID BALANCE

Distribution of blood flow and neutrophil kinetics in bronchial vasculature of sheep
E. M. Baile, P. D. Paré, D. Ernest, and P. M. Dodek 1466

Nitric oxide–endothelin-1 interaction in humans
G. Ahlborg and J. M. Lundberg 1593

GAS EXCHANGE, MECHANICS, AND AIRWAYS

In vitro bronchial responsiveness in two highly inbred rat strains
C. G. Wang, J. J. Almirall, C. S. Dolman, R. J. Dandurand, and D. H. Eidelman 1445

Methacholine-induced bronchoconstriction in rats: effects of intravenous vs. aerosol delivery
F. Peták, Z. Hantos, Á. Adamicza, T. Asztalos, and P. D. Sly 1479

Mechanical advantage of sternomastoid and scalene muscles in dogs
A. Legrand, V. Ninane, and A. De Troyer 1517

Partitioning airway and lung tissue resistances in humans: effects of bronchoconstriction
D. W. Kaczka, E. P. Ingenito, B. Suki, and K. R. Lutchen 1531

Reflex tracheal smooth muscle contraction and bronchial vasodilation evoked by airway cooling in dogs
T. E. Pisarri and G. G. Giesbrecht 1566

Effect of stochastic heterogeneity on lung impedance during acute bronchoconstriction: a model analysis
C. W. Thorpe and J. H. T. Bates 1616

Effects of transverse fiber stiffness and central tendon on displacement and shape of a simple diaphragm model
A. M. Boriek and J. R. Rodarte 1626

A model of the spontaneously breathing patient: applications to intrinsic PEEP and work of breathing (MODELING IN PHYSIOLOGY)
T. F. Schuessler, S. B. Gottfried, and J. H. T. Bates 1694

PULMONARY CIRCULATION AND LUNG FLUID BALANCE

Effect of mechanical deformation on structure and function of polymorphonuclear leukocytes
Y. Kitagawa, S. F. Van Eeden, D. M. Redenbach, M. Daya, B. A. M. Walker, M. E. Klut, B. R. Wiggs, and J. C. Hogg 1397

TNF-α in smoke inhalation lung injury
C. A. Hales, T. H. Elsasser, P. Ocampo, and O. Efimova 1433

Complement-mediated lung injury and neutrophil retention after intestinal ischemia-reperfusion
F. Xiao, M. J. Eppihimer, B. H. Willis, and D. L. Carden 1459

Role of inhibition of nitric oxide production in monocrotaline-induced pulmonary hypertension
R. Mathew, E. S. Gloster, T. Sundararajan, C. I. Thompson, G. A. Zeballos, and M. H. Gewitz 1493

Very high pressures are required to cause stress failure of pulmonary capillaries in Thoroughbred racehorses
E. K. Birks, O. Mathieu-Costello, Z. Fu, W. S. Tyler, and J. B. West 1584

Fractional changes in lung capillary blood volume and oxygen saturation during the cardiac cycle in rabbits
G. P. Topulos, N. R. Lipsky, J. L. Lehr, R. A. Rogers, and J. P. Butler 1668

Regression of hypoxic hypertension-induced changes in the elastic laminae of rat pulmonary arteries
S. Q. Liu 1677

No. 6. JUNE 1997

THIS MONTH IN THE JOURNAL 1715

INVITED EDITORIAL

Invited Editorial on "A finite-element model of oxygen diffusion in the pulmonary capillaries"
A. S. Popel 1717

ENVIRONMENT

Recovery processes after repeated supramaximal exercise at the altitude of 4,350 m
P. Robach, D. Biou, J.-P. Herry, D. Deberne, M. Letournel, J. Vaysse, and J.-P. Richalet 1897

Volume capacity and contraction control of the seal spleen
A. Cabanac, L. P. Folkow, and A. Schytte Blix 1989

Thermal and circulatory responses during exercise: effects of hypohydration, dehydration, and water intake
L. E. Armstrong, C. M. Maresh, C. V. Gabaree, J. R. Hoffman, S. A. Kavouras, R. W. Kenefick, J. W. Castellani, and L. E. Ahlquist 2028

EXERCISE AND MUSCLE

Augmentation of exercise-induced muscle sympathetic nerve activity during muscle heating
C. A. Ray and K. H. Gracey 1719

Increase in percutaneous muscle biopsy yield with a suction-enhancement technique
J. V. Hennessey, J. A. Chromiak, S. DellaVentura, J. Guertin, and D. B. MacLean 1739

Fibrinolytic responses to acute physical activity in older hypertensive men
C. A. DeSouza, D. R. Dengel, M. A. Rogers, K. Cox, and R. F. Macko 1765

Tone-entropy analysis on cardiac recovery after dynamic exercise
E. Oida, T. Moritani, and Y. Yamori 1794

Gender-specific regional changes in genetic structure of muscularity in early adolescence
R. Loos, M. Thomis, H. H. Maes, G. Beunen, A. L. Claessens, C. Derom, E. Legius, R. Derom, and R. Vlietinck 1802

A 33-yr follow-up of peak oxygen uptake and related variables of former physical education students
P.-O. Åstrand, U. Bergh, and Å. Kilbom 1844

Skeletal muscle biochemical adaptations to exercise training in miniature swine
R. M. McAllister, B. L. Reiter, J. F. Amann, and M. H. Laughlin 1862

Norepinephrine spillover at rest and during submaximal exercise in young and old subjects
R. S. Mazzeo, C. Rajkumar, G. Jennings, and M. Esler 1869

Effect of intermittent weight bearing on soleus fiber force-velocity-power and force-pCa relationships
J. J. Bangart, J. J. Widrick, and R. H. Fitts 1905

Improved fatigue resistance not associated with maximum oxygen consumption in creatine-depleted rats
T. Tanaka, Y. Ohira, M. Danda, H. Hatta, and I. Nishi 1911

Exercise-induced changes in circulating growth factors with cyclic variation in plasma estradiol in women
M. Hornum, D. M. Cooper, J. A. Brasel, A. Bueno, and K. E. Sietsema 1946

Gas exchange and cardiovascular kinetics with different exercise protocols in heart transplant recipients
B. Grassi, C. Marconi, M. Meyer, M. Rieu, and P. Cerretelli 1952

Anabolic influences of insulin-like growth factor I and/or growth hormone on the diaphragm of young rats
M. I. Lewis, T. J. LoRusso, and M. Fournier 1972

Task failure with lack of diaphragm fatigue during inspiratory resistive loading in human subjects
D. K. McKenzie, G. M. Allen, J. E. Butler, and S. C. Gandevia 2011

Oxidation effects in fatigue: unphysiological responses to "depolarization" in skinned muscle fibers (LETTERS TO THE EDITOR)
G. D. Lamb and D. G. Stephenson; T. M. Nosek and M. A. P. Brotto 2054

METABOLISM

Weight loss and wrestling training: effects on nutrition, growth, maturation, body composition, and strength
J. N. Roemmich and W. E. Sinning 1751

Weight loss and wrestling training: effects on growth-related hormones
J. N. Roemmich and W. E. Sinning 1760

Muscle adaptations to hindlimb suspension in mature and old Fischer 344 rats
C. S. Stump, C. M. Tipton, and E. J. Henriksen 1875

Effect of glucose supplement timing on protein metabolism after resistance training
B. D. Roy, M. A. Tarnopolsky, J. D. MacDougall, J. Fowles, and K. E. Yarasheski 1882

Exercise-induced changes in β-adrenergic-receptor mRNA level measured by competitive RT-PCR
N. Fujii, T. Shibata, S. Homma, H. Ikegami, K. Murakami, and H. Miyazaki 1926

Intravascular oxygen distribution in subcutaneous 9L tumors and radiation sensitivity
G. J. Cerniglia, D. F. Wilson, M. Pawlowski, S. Vinogradov, and J. Biaglow 1939

Marked differences in functioning of the hypothalamic-pituitary-adrenal axis between groups of men
J. S. Petrides, P. W. Gold, G. P. Mueller, A. Singh, C. Stratakis, G. P. Chrousos, and P. A. Deuster 1979

CONTROL OF BREATHING, CIRCULATION, AND TEMPERATURE

Otolithic and tonic neck receptors' control of limb blood flow in humans
H. Normand, O. Etard, and P. Denise 1734

cAMP production in rabbit carotid body: role of adenosine
J. Chen, B. Dinger, and S. J. Fidone 1771

Responses of group III and IV muscle afferents to dynamic exercise
C. M. Adreani, J. M. Hill, and M. P. Kaufman 1811

Muscle chemoreflex increases renal sympathetic nerve activity during exercise
K. P. O'Hagan, S. M. Casey, and P. S. Clifford 1818

Involvement of the fastigial nuclei in vagally mediated respiratory responses
F. Xu and D. T. Frazier 1853

Augmented sympathetic tone alters muscle metabolism with exercise: lack of evidence for functional sympatholysis
J. K. Shoemaker, P. Pandey, M. D. Herr, D. H. Silber, Q. X. Yang, M. B. Smith, K. Gray, and L. I. Sinoway 1932

CELLULAR ASPECTS OF LUNG FUNCTION

Effects of salbutamol on intracellular calcium oscillations in porcine airway smooth muscle
Y. S. Prakash, H. F. M. van der Heijden, M. S. Kannan, and G. C. Sieck 1836

Pathophysiology of neonatal lung injury induced by monoclonal antibody to surfactant protein B
G. Grossmann, Y. Suzuki, B. Robertson, T. Kobayashi, P. Berggren, W.-Z. Li, G.-W. Song, and B. Sun 2003

SYSTEMIC CIRCULATION AND FLUID BALANCE

Sympathetic withdrawal and forearm vasodilation during vasovagal syncope in humans
N. M. Dietz, J. R. Halliwill, J. M. Spielmann, L. A. Lawler, B. G. Papouchado, T. J. Eickhoff, and M. J. Joyner 1785

Liposome encapsulation attenuates hemoglobin-induced vasoconstriction in rabbit arterial segments
A. S. Rudolph, A. Sulpizio, P. Hieble, V. Macdonald, M. Chavez, and G. Feuerstein 1826

Venous and arterial reflex responses to positive-pressure breathing and lower body negative pressure
J. K. Peters, G. Lister, E. R. Nadel, and G. W. Mack 1889

Blood volume and cardiac index in rats after exchange transfusion with hemoglobin-based oxygen carriers
R. Migita, A. Gonzales, M. L. Gonzales, K. D. Vandegriff, and R. M. Winslow 1995

GAS EXCHANGE, MECHANICS, AND AIRWAYS

Evaluation of estimates of alveolar gas exchange by using a tidally ventilated nonhomogenous lung model
T. Busso and P. A. Robbins 1963

Effect of triiodothyronine augmentation on rat lung surfactant phospholipids during sepsis
S. M. Ksenzenko, S. B. Davidson, A. A. Saba, A. P. Franko, A. M. Raafat, L. N. Diebel, and S. A. Dulchavsky 2020

A finite-element model of oxygen diffusion in the pulmonary capillaries (MODELING IN PHYSIOLOGY)
A. O. Frank, C. J. C. Chuong, and R. L. Johnson 2036

Stabilized bubbles in the body: pressure-radius relationships and the limits to stabilization (MODELING IN PHYSIOLOGY)
H. Van Liew and S. Raychaudhuri 2045

PULMONARY CIRCULATION AND LUNG FLUID BALANCE

Inhibition of CD18 or CD11b attenuates acute lung injury after acid instillation in rabbits
H. G. Folkesson and M. A. Matthay 1743

Selective endothelial dysfunction in conscious dogs after cardiopulmonary bypass
P. Zanaboni, P. A. Murray, B. A. Simon, K. Zehr, K. Fleischer, E. Tseng, and D. P. Nyhan 1776

Norepinephrine-induced contraction of isolated rabbit bronchial artery: role of α_1- and α_2-adrenoceptor activation
A. O. A. Zschauer, M. W. Sielczak, D. A. S. Smith, and A. Wanner 1918

Subject Index to Volume 82 2057
Author Index to Volume 82 2075